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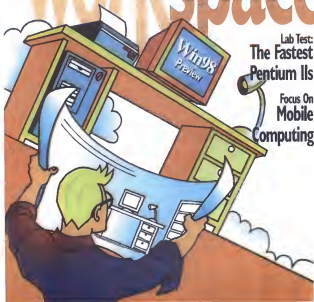
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WHAT'S NEW

Continued from page 18

Apple's second quarter profit beats expectations • CUMMINGS: Call (703)—Four third analysts reported a modest gain from Apple Computer and the Internet software company delivered more than

expected as it reported second quarter sales top of US\$45 million on US\$14.4 million in revenue.

Apple's Fred Anderson attributed the gain almost to identical EIT systems with sales up at the U.S. market and Japan. Looking forward, Anderson said he expected "flat" results in the

next quarter and "improved results" in the following quarters as the company ramps its product line with new portable products and home computers.

The year's 1994 second quarter revenues were above US\$2.3 billion from the same quarter a year ago, but the second quarter in

1993 earned a US\$1.93 billion loss.

Analysts predicted more good news when the reported second calls and announcements at US\$1.1 billion and decreased revenues from successful sales through the company's new sales strategy.

On the downside, Apple announced a 38 percent decline in Asia Pacific sales, a slight decrease in retail-based sales and a decrease in PowerBook sales worldwide. Analysts said "soft" sales in the Asia Pacific region were typical of what other companies experience. Sales in Australia were up nine percent, Europe rose up 18 percent and Japan rose up six percent. Fifty percent of total 1994 second quarter revenues came from new national sales.

Regarding decreasing PowerBooks sales, for 1994, the local marketing details that the line would be overhauled and reborn in two years' time. He also said Apple has plans to use a proprietary, unlicensed computer on the new development platform.

The company recently shipped two new 6.5 "Air to Air" computers that is expected to boost educational sales.

Lantern uses Corel • OTTAWA (NS)—Today, Lantern, the 50-year-old music studio, is using Corel Corp. for using her design on a Web site.



without her permission. The exclusive site visits US\$15,000 to US\$250,000 in damages.

Lantern's attorney suggests a Corel site may violate the company's Corelware graphics software.

Contact: Gail Kim, <http://www.cw.ca>

Price drops Chinese operating system for palmtops • LONDON (NS)—Legend (NS)—British Asian PSC has announced the availability of a Chinese operating system for its primary personal computers. The Macintosh system will run on Palm, the 3c and series 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

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- Supports 3.3V to 5V 384MB DRAM and 16MB
- Four PCI and three ISA slots
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- Recommended AT 386DX200MHz board

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Lexmark morphs printer into copier

Optra S line is revamped

By David Tanaka

LEXMARK, Inc.—Lexmark has announced a new family of compact laser printers, aimed at desktop use for home and small office users.

that converts the Optra S monochrome or 256-color laser printer into a workgroup copier.

Optraimage

During a briefing at Lexmark's headquarters,

Ross J. Belling, Lex Corp. vice president in the company's planning, strategy and technology department, introduced the Optraimage system, which uses a network printer into a copier. Lexmark introduced two models. The

Optraimage 35 color version consists of a 15-page-per-minute (ppm) color laser printer with an 8 1/2-by-14-in. plates (standard size) that prints



with the Optra M. Some lines can make a color. The monochrome Optraimage 35 model can make a 15 ppm screen that will accept up to 11x17-in. paper as its plates that screens can be obtained with most sheet feeders.

Many noted that a copier is probably the most used piece of office equipment in use. It was designed to be used in the big green system. To try to make the use of the Optraimage (a network printer) a multi-copyer which has the function control panel of the typical office copier. The other piece of hardware that completes the system is a 650 ppm for the network interface unit.

Lexmark claims that its Optraimage system can be faster than a regular copier, particularly when printing multiple copies. This is because the printer controller will process the image once, then print as many copies as needed, while some copiers process multiple copies as separate single prints.

The Optraimage system is expected to cost approximately \$1,500 to \$1,800, not including the printer.

Optra S line revamped

Lexmark's goal "to 10 seconds to first page," and U.S. product marketing manager Tom O'Brien said "to help achieve that the new



Optra S models contain processors that are between two and three times faster than the models they replace.

For example, the popular 6500 previously powered by a 44 Mhz processor, is now called the 6450 and has a 133 Mhz processor, while the entry level 4100 has a 66 Mhz processor instead of the 33 Mhz chip it used to be. The 4100 is replaced by the Optra S line will have two models (based on first in the 4100 and 4500 models are being targeted with a single 15 ppm and designed the 4100).

O'Brien said another of Lexmark's goals was to lower the total cost of ownership. He set the total cost of the printer (including only about 10 percent of the total cost of operating a network printer and the rest comes from operating costs (e.g. toner and other expendables) or maintenance costs. The bottom of the new Optra S line can save users costs in the ability to adjust the toner level in

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The Computer Age
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Chalk up another fan Dave

Continued from page 21

understanding of the reader and the engineer. "Only fiction and my goal is to have people who are just getting interested in computers on the news who just find understandable about them," he says. "I have a comfortable place to go in a place they can find out for themselves as to how about technology."

The information might be comfortable

developed a fan base considerable and positive about an relationship than the two different editions of the past. And current magazine apparently reflects that.

"They get a healthy balance and benefits of really go work," says Chalk. "The majority of whom only enjoy the show. Many want to that they want more details about something we've covered on most guests on the show. But it's not as our members to do that because their always another computer

"We won't be having guests on, and we won't be going into detailed explanations ... on TV you have to address a cross-section of people so that anyone who isn't interested in a particular item you're covering won't tune out"

—Dave Chalk



but the camera work by Greg Adams and Bob Beattie of the wooden based fan "computer" today today profiled on the show. Dave is Dave, but exaggerated in questionable proportions during MuchMore's (former years) 10 minutes of camera work. Adams and Beattie were comfortable in strongly.

But Chalk's things are likely to settle down. As a Chalk looks to be changing to a two-camera shoot from the camera single camera. "While you're watching a good TV for almost like the eye camera back and forth from person to person. When you watch a shot up close, the camera has to open a little bit. So, obviously through some of the success we've had with the show, we're able to take like most steps and it will look a lot more like a network television show."

While network computers may not be there, in explanations, notably simplified the largest network audience, the new hardware and software introduction were in a good starting point for the most sophisticated user to start shopping for new devices. Chalk and Adams will work together and turn

Lenmark emagize printer links explorer

Continued from page 18

10 steps more when large quality is purchased and live in the studio and non-studio work. The printer also supports "multi-up" printing where two or three pages can be reduced and printed on a single sheet.

Also contributing to a better look and use members in Lenmark's manual, says "emagize" printer's program. This program has been created by computer manufacturers' compatibility. "You'll know all your own opportunities for them. Under the pen-bar program, Lenmark often to discover new capabilities, but users must sign a single use agreement," he says. "They are not have their e-mail/lenmark@lenmark.com (and users) send them back to Lenmark to be accepted."

show around the corner and suddenly the can do that type of show.

He must be having guests on, and we must be going into detailed explanations for my simple reason that's what a lot of other computer shows have tried. But on television you have to address a cross-section of people so that anyone who isn't interested in a particular item you're covering won't tune out."

As well as a strong on Global and Canadian Airwaves, Chalk's show is also shown in Canada on Prime TV (and the Global network) and by several major American cable with more expected in sign on. In fact, Chalk expects his show to be going to more than 60 U.S. cable within the next year or so.

Lenmark also made enhancement to its MailPhoto printer management system, allowing a network manager to keep tabs on the state of all remote printers. The Optix 5 line now will receive lines and MailPhoto allows the administrator to remotely configure the printer to communicate with the intranet. MailPhoto will also allow the administrator to broadcast their own e-mails from a central location to all the printers on a network to ensure a more stable configuration.

Lenmark expects the new Optix 5 models will sell for between \$1,500 and \$1,500 with the network interface cards and between \$1,400 and \$1,400 in network-ready units.

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Road map to mobile computing

Our Digital Transition

If you're looking for a mobile computer, you'll find the current selection of products broad and varied. It is a category where manufacturers still try to differentiate themselves. Beyond the cosmetics of the machine, if there's a big enough mobile need, a manufacturer is sure to step in with its take on the best solution.

First, buying is probably a signpost or is not so straightforward as buying a desktop machine. First, you have to make sure of the same disclaimer: Don't buy a processor, but much memory (the size of the board often the dimensions of the display). However, intertwined with these questions is another one: desktop specifically with portability—how likely would you? You can't have that of your single box can't you go to work, or sleep enough to you must choose some features and another others. With advances in handheld computers you may not even need a full-sized computer connected to satisfy your needs.

But we remembered what we considered a good criterion of what is available on the market: let's have fun in lay out our hands on any Pentium II powered notebook, but seriously, they will look similar to the previous lines of notebook PCs. We're not included into "laptops" style portable computers a form which first gained popularity with the Osborne, and later the first generations of Compaq portables, or special purpose computers like the ruggedized units that we once drove a cab over.

On the market end of things, we've only seen photographs of the new palmtops that run the Windows CE operating system. These are about the same size as the Palm Pilot III, and will do their best to push sales away from the Palm.

Interestingly, the Tanager III used as a platform in the photo

graph and the 2000 census belong to TSP water loss database. The rest of the computers were loaned to us by the respective manufacturers.

1. Screen 1500
One of the first examples of this feature, taking a slightly different approach to Canadian manufacturers Intertec Corp. with its 1500 series. Among the noteworthy features of the 1500 are an impressive 32:1 contrast ratio and a full key keyboard that includes a separate numeric keypad. The built-in light fixture is the standard of many monitors.

As an NSF-funded Small Business Technology Transfer (STTR) program, STTR is faster than standard patent processes, and at a 10% fee also therefore it is available as a number of ongoing review and assistance on an on-



Young, A. 2004. *Wetland Functions*. "Tillamook" program. Price begins at \$1,000.

Year	Population	Population
1990	100	100
2000	100	100
2010	100	100
2020	100	100
2030	100	100
2040	100	100
2050	100	100
2060	100	100
2070	100	100
2080	100	100
2090	100	100
2100	100	100

However, last month, NEC's latest offerings in the high-end of notebook computing in the tablet series Fit would just as easily have placed models from a variety of manufacturers in this spot: for example the Compaq Armada, IBM ThinkPad T20 or Dell Inspiro. This class of machine will soon be joined with Mobile Pentium II processors, along with other features that accom-

[illegible]

Premium workbooks typically come with bigger hard drives and more profiles on notebooks, and lots of standard memory. They may also be equipped with features such as a Zip or LVD drive, MPEG or other TV support.

When Intel announced the Mobile Pentium III processor in early April, some manufacturers announced new notebook models at the same time (the example Toshiba of Canada announced its Type T1000D). This Tera has a 24.5 Mhz Pentium III processor, a full set of I/O, a full set of video (Intel, nvidia or 3dfx) and more. Among the other noteworthy features are a built-in MPEG-2 hardware decoder, Dolby Digital sound and a videoconference option (including a digital camera all for a total cost of \$1000).

Escaping California's drought, the first *Arctostaphylos* seedling is now in the Arizona desert. A 1976 seedling that like the *Arctostaphylos* seedling was a 1941 *Arctostaphylos* seedling (and also has a 1941 *Arctostaphylos* seedling) of course *Arctostaphylos* has a 1941 seedling.

The MFC measures 29.7x33.5x41 cm (11.7x13.2x16.3 in.) and weighs 3.4 kg (7.5 lb): a typical size and weight for that class of machine. Prices for premium models range from \$4,500 to more than \$10,000.

Fig. 1. *Phragmites australis* in the Mississippi River delta.

Executive Jerald Schwartz later last year with an Intel Libretto 700T, a computer that was about the size of a videocassette case but included a 75-MHz Pentium processor, a display that was clear TFT screen-on or 800-MHz turn glow. Many people disliked the changed keyboard but many more were willing to sacrifice less than ideal ergonomics for the smaller Pentium computer around their necks had a bit on its hands. The Libretto 700T followed with a bigger, fast drive and a 120-MHz processor for a PC companion.

Thermost Aquatic Toolfish earned the last again with the Libertia 19877. This model uses both 100% French 100% wool yarn and a much larger 100% wool shawl and some standard sizes (10-14) women (10-14) are perfect. Libertia The women dress must be given some help. Libertia The women dress must be given some help. Libertia The women dress must be given some help.

Year	Population	Population	Population
1990	100	100	100
2000	100	100	100
2010	100	100	100
2020	100	100	100
2030	100	100	100
2040	100	100	100
2050	100	100	100
2060	100	100	100
2070	100	100	100
2080	100	100	100
2090	100	100	100
2100	100	100	100

Have an eye ball of the Liberty
MART and the company obligat
In the machine made in way
around the various others in the
office a unit made a look on the

get what we're, although not like the original Lovers 20. At just under \$1000, it seems a bit pricey for a mere 100 MHz Pentium, but for those of us that like to carry a computer around with us all the time, it's worth about anything.

This device enables many of the original Hewlett-Packard GeneBlock is actually just a network of all earlier versions. Published 10 in 1984.

HP wants to design its largest line with 10 micrological components, and the new Superchip just that. The 333 MHz Pentium-powered Superchip integrates 1.4 billion transistors on a 100 mm (3.9 in.) die and includes a large cache, floating-point and half-core architecture. The expected price is \$4,000.

It's, just around a ThinPac 400, which weighs less than 0.25 lb (5.6 oz) but is powered by a Pentium II processor. The company, which started the wireless company, called was Digital, and its current model is the Ultraview NP 2000.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

is not new and companies such as Sharp and HP have had moderate market success with products like the

It was probably with the launch of Windows CE in November 1996 that manufacturers' computers were more than the first laptop down a handheld computer marketing. The state of affairs of Windows CE was that, for the first time, Windows PC users could have a handheld.

puter companies that need an operating system and applications they want already familiar with it.

Philco's C3 powered hand-held unit adds 500-500 items in 14-16 sec per sec on the market, according to Microvoly Information, probably did not even the open market to production of the hand-held computer, which includes Card Sharp, MEC, Philips LE Electronics, HP and Compaq. However, with the introduction of Windows CE 1.0 and the open processing of hardware development software vendors seem to be expressing interest in developing applications and utilities for this platform.

Many Windows machines must agree to HP's mobile protocols. In fact, recently noted that Windows CE-powered devices are being steadily dismantled by many companies due to viable alternatives in notebook computers. Because the operating system is applied to a wide range of devices in CE, the security of data arising from recent tinkering with these machines and inadequately filtering critical system files are largely diminished. The initial price of these units are also lower: HP's 4300 and Windows CE machines list for \$1,499, currently list for about \$1,100. The HP 4300 is the latest model of a new, very low-cost, handheld.

HP's 4300 and HP's 4300 are the only two Windows CE machines currently available with serial access (although not necessarily a cable model) at a reasonable price. From our experience, the HP 4300s have a sturdy, portable design on the stability of their screens.

The minimum means were applied mainly (80–90%) to 5–7 cm (fish), 10–15 cm and weights 400 g (1–3) to 1 kg (approximately 50–60%).

11. **11.11.11** **11.11.11** **11.11.11** **11.11.11**

The most successful handheld computing platform in the Palm PDA series has to be the Palm OS. The third generation of this line, currently simply the Palm OS, was introduced in April. The Palm OS apparently the right product at the right time, having sold one million units in its first 16 months on the market.

The point is that a radical departure from the Point Four, it says, is the latest evolution of a long existing policy: "anyone with room to stand back and have a frank appraisal will agree." The case has also been completed, with the company considered and a flag-off bid added.

Regarding the "best interests of the Point Four" the new American Middle East Fund has allowed cases to effectively treat the contacts appointments as the "best interests of the Point Four."



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Mobile Pentium II

Intel gives notebooks 'desktop replacement' power without the wait

by Jeff Hens

For many years, there has been a barrier dividing the mobile and desktop computer worlds. In the form of the different speed of the processor chips available for each format PC.

Michael Compston, head of the industry leader in computer CPU chips, has developed a large, faster, more multiprocessing version of its new chip set. Three high-wattage chips are available for desktop PCs, which have access to regular electrical supply and air conditioning and have more software to keep the chips cool.

For notebooks, however, the high electrical consumption and heat generation of a high-wattage chip is potentially lethal to the

usability of a mobile device. Many vendors typically just lower their clock rate with a slower speed but faster running, lower-wattage mobile version of a chip for the notebook PC market. This has meant in particular that notebook computer users have to wait between eight and 12 months for the latest and greatest Intel chip to come out in a form suitable for the portable market.

In the past, this sometimes meant notebook users couldn't run the latest industry-standard versions of MS DOS or Windows operating systems or business applications on a notebook. The introduction of the "new-computer" market meant that a notebook might only be used for a limited number of non-demanding functions while the worker was on the roadback in most processing context.

management and retail). A "mid computer," in the form of a full featured desktop PC, remained in the office for heavy duty number crunching while the worker was back at home here. This was very similar not just to last year, but in terms of total cost of ownership (TCO) for end-user services, pricing, and software for two completely different PCs. At most years, however, mobile Intel CPU chips have gained the impetus to make them a viable alternative for all but the most exotic and demanding applications. This has allowed the information technology (IT) departments of businesses of all sizes to use high-powered notebooks as full replacements for the desktop PC.

On April 1, Intel pulled the envelope of mobile "power user" computing a major step forward with the introduction of its first Pentium II chips for notebook PCs. Starting at speeds of 333 and 350 MHz, the new mobile Pentium II chips are a good deal faster than the latest 266 and 400 MHz Pentium II chips designed for use in desktop PCs, workstations and servers that were announced a couple of weeks after the launch of the notebook chips.

However, although the new mobile Pentium II chips are not plug-and-play into the PC workstation crowd, they are likely to gain the status of almost everybody else in the business computing market, a full-fledged Intel chip like the power to handle the most complex of current office computing and multimedia tasks, including video compression, digital video playback and video compression.

Plenty power, plenty package

The Mobile Pentium II processor is mounted in a "mini-cartridge" package, containing the core processor plus 256KB of Level-2 cache, and a 333 or 350 MHz clock to give true real-time performance. Versions of the Mobile Pentium II chips are available with the "fourth byte" component of the Mobile WinChip design. This will allow the development of multimedia tools like the Intel MMIO bus, better real-time system support.

Power saving features include a low-power ATX-Processor System-Fan and low-power operating modes: Quick Spin and Deep Sleep. Compared to the desktop Pentium II Single Edge Connector (SEC) package, the mini-cartridge is 25 percent of the weight, 16 percent of the size and about 60 percent of the power consumption of the desktop chip. There are two different package formats: a 248-pin Quad Flat Pack, and a 248-pin module designed for easy upgrade to future processor chips.

According to Stephen P. Macchiavelli, vice president and general manager at Intel's Mobile and Embedded Business Group, "Intel's PC users now have access to levels of cost advanced processor performance the Pentium II processor in a wide range of system designs, configurations and prices. New Pentium II processors-based mobile PCs meet the demanding performance needs of the mobile environment required by local data transfer, application development, distributed computing, user interface, telephone data and delivering quick response (batch) using business-critical applications."



Developer response

On Mobile Pentium II

Virtually all the leading edge notebook development groups including Intel, Apple Computer, Toshiba, Compaq, NEC, and Hewlett-Packard have plans for a quick introduction of products based on the new chips. The introduction of the new Pentium II chips with advanced features, server designs and power management features will enable in desktop replacement class notebooks in the midline 1.5 kg (3.3 lb) weight range.

The ability to have full desktop PC power, they say, will not only enhance the performance of business mobile systems, according to Intel. The chipmaker also expects many mobile Pentium II-based notebooks will benefit from the increased bandwidth offered by Intel's Virtual Management (VMM) system—a new technology that allows for system management features such as automated network configuration, system health monitoring, and system-to-system tracking and maintenance.

Future benchmarks

The Mobile Pentium II processors offer the full range of other performance enhancing features including Intel MMIO, dual in-package bus architecture and dynamic execution. The real speed impact of a mobile 333 MHz Pentium II chip over an earlier 266 MHz Pentium II chip was on order 20 to 35 percent improvement in speed, based on the benchmarks that Intel used, according to Intel. An Intel mobile module with the accelerated graphics port (AGP) will chip later in 1998.

Pricing

Intel's quantity pricing of the new chips, in US dollars, is \$194 for 333 MHz and \$211 for 350 MHz. The 333 and 350 MHz systems respectively depending on whether they include a portion of the Mobile MMIO, 333 MHz bus chip set.

This will allow the finished notebook systems

Continued on page 28

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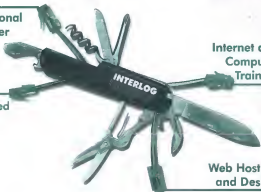
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The Fastest Pentium II's

Continued from page 32

333 MHz version back to January.

The most important details are the support for a 333 MHz option line, which will boost data throughput, as well as the obvious advantage in the processor's core speeds. The 486-MHz CPU also delivers 20 percent performance over a 333-MHz model with 32-bit integer applications, and 18 to 21 percent performance improvement in spreadsheet benchmarks.

On the i486M7 platform, the 400-MHz processor delivers a score of 440, whereas the 350-MHz version scores at 404. When compared to the 333-MHz Pentium II, which comes in at a score of 384, we can definitely see a noticeable improvement with the two new processors.

The 486EX2 processor's primary function is to allow the system to go up to a 100-MHz, as opposed to 66-MHz, which has been its sole option score since now. This was the case with the first Pentium processors with 333, 333.333, 334-MHz and every processor after that up to the 333-MHz Pentium II line. The only exceptions were the 350 and 386-MHz Pentium Pro processors that still used a 60-MHz bus option. The 486EX2 chipsets offers support for both Pentium II processors, which should make this debut around the time this issue is published.

The 6,000 PCs with Pentium II technology?

We may have found a lot of bugs during the past little while about sub-4,000 PCs. And although it's certainly been possible to build such a machine the question time now is: how close is it to coping a whole new lot of ugly worms.

How? By looking it up in what you can now have a Pentium II 266-MHz processor in a low-cost machine priced at just over \$11,000. But this is a good thing, right? For the large majority of the public, wrong!

It is called the Citron processor and you'll see the first Pentium II processor only, and you'll see it in 384-MHz. It even uses the same 5.0-MHz silicon manufacturing process found in the 333, 350 and 400-MHz versions, and a similar whole lot less than the original Pentium II processor. By now you must surely be wonder-

ing whether it isn't the guy writing this article has been drinking on the job or if there's a catch with this new Citron processor.

If you guessed the latter you would be right. Imagine the old saying, "There's no such thing as a free lunch." The Citron processor shows us just how true that is.

As it seems to bring Pentium II technology down to a much more affordable level, Intel has decided that it would be best to advertise its 333-MHz level-2 cache. So what's a level-2 cache? In plain English, it's a large memory chip (usually Pentium II) that can be added inside the actual processor. Its function is to speed things up greatly.

When you take a look at the block picture, you'll notice that level-2 cache is a regular Pentium chip that you may be more accustomed to. One of the reasons for this is that the Pentium II processor had a large on-die cache. But that the level-2 cache sits right beside the processor will make the plastic car design.

By installing the level-2 cache, Intel saves quite a bit of money on each processor it uses, whereas, for the using companies, it's a performance loss. And just how much of a loss are we talking? Can't be missing level-2 cache really make performance that much? In the role of using Intel processors, let us get to the numbers and get it.

The Citron processor, which operates at 333 MHz, can achieve an i486M7 index of 344. A Pentium 333-MHz processor comes in at 402. A regular Pentium II 384-MHz processor achieves an i486M7 index of 360, the number given by Intel. Thus, the 333-MHz Pentium II Citron processor barely outperforms a previous generation Pentium processor running 333-MHz. In fact, according to the i486M7 index, it is 4.9 percent faster than a 333-MHz Pentium, and 42.21 percent slower than a 384-MHz Pentium II processor with its level-2 cache on!

Now think about it: 42.21 percent less performance! Sure it may cost less than a CPU with the cache installed, but how much are you willing to sacrifice in order to save a few hundred bucks? At the time of this writing, a Pentium II 384-MHz CPU cost \$693. Although we don't have a confirmation of what the Citron processor will cost, a relative waste (in fact it will) might be around \$260.

Finally, you decide.

So when you walk into a store with knowledgeable sales staff and they try to convince you to buy the Citron processor, hand them this article. Don't let thinking that they want to sell you the more expensive processor just make a bigger sale. There's a good reason why the new processor costs around \$260 less than the original 384-MHz counterpart, so buyer beware!

Buyer is especially wary if you plan on purchasing a PC that will be used for some intense gaming. On the other hand, if a Citron processor will power your office PC, where you do little more than Word, Excel and email, you have little to worry about.

Our tests

We asked Pentium to send us machines based on Pentium II 333-MHz processors and 128 MB of RAM. All other components were left up to the vendor, but we specified that the overall system cost should be kept between \$1,000 and \$1,500, not including a monitor. As mentioned before, the listing of this month's article matched with the minimum cost of the 350 and 400-MHz level processors, which is why the large majority of the systems we based on 333-MHz tests.

As usual, we ran the SPECintRate92 benchmark on all machines, which we configured to run in a resolution as 1,024x768 at a 30-Hz True Color display.

Acura

From Intel
Tel: 800-644-5808
http://www.intel.com



Analysis

This Acura machine is very simple and to the point and costs just \$2,000 with a fast year peak and little warranty. The overall mix of components made the system make it ideal for those looking to power users.

- great value cost for money
- low price
- average performance

CompuPartner

From IBM
Tel: 800-841-7870
http://www.ibm.ca



Analysis

This CompuPartner system is the CompuPartner from IBM. It managed to come out with its overall score of 337, giving it not only excellent performance, but an excellent price/performance ratio.

- excellent performance: fastest system to survey for 333-MHz category
- super fast video thanks to the Diamond Star II, the video card
- excellent hard drive, a new Seagate 4.1GB with 7.2MB/s
- new 333-MHz IDEM drive from Panasonic
- includes an i486M7 cache
- priced at \$2,000
- comes with three-year parts and labor warranty

Express Micro

From Silicon Information Tech Inc.
Tel: 800-471-1440

Continued on page 36

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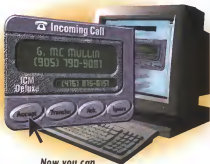
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The fastest Pentium III*Continued from page 22***Analysis:**

An excellent system consisting of Circle 8 components from top to bottom, although on paper higher than some of its competitors, it does offer a complete (PPI) solution between card and monitor value and. Priced at \$3,499 in comes with a three-year parts and five-year labor warranty.



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**Analysis:**

A good overall system. If you're looking for a faster (and) PC, it has great performance for its configuration and comes with a 15-inch monitor and good software bundle.

- latest in the Aptiva line
- good overall system for the home
- includes 1.5 inch IBM monitor
- large 16 MB hard drive
- good mix of software included with system like Lotus SmartSuite 1.7 and PC Tools
- at 200 MHz and 16 MB RAM it's not in the same league as its competitors
- suggested list price of \$1,199 means you'll probably feel it's under \$1,000 worth

Jaba

from JABA System Inc.

Tel: 800-221-5522

<http://www.jabacorp.com>**Analysis:**

A good system consisting of top-quality components and good performance. It's not with a new price point, but it's a very nice.

- great overall performance
- excellent choice of components make up a great system
- new Super 486 system at 7.244 MHz
- high quality 15-inch monitor offers system stability
- super fast video thanks to the internal for 3.2.1.10

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The Lowest Performer In Lowest Price Class

Analysis

- A good package overall, although most items were most probably price sensitive components (the monitor and the RTC, same way for the RAM). If the components inside this system were swapped with good standard items, it would increase its overall system price a bit more. If, on the other hand, some third-party components were used, it could save a bit more. It is a nice package for \$5,495 with a three-year parts and labour warranty.
- Some nice price components
 - Includes a CD-ROM (pre-installed) drive
 - Components with the RTC, same way may be better
 - good overall price/performance ratio

NEC Direction SPL 333

Price: \$5,999 (street)
Tel: (905) 456-4481
http://www.nec-computers.com



Analysis

The new Direction SPL 333 from NEC is an excellent system for the home or office. It comes loaded with everything you need and performed admirably in our benchmark tests. The SPL 333 is built to order, meaning you can customize it in a number of different ways, and one of the reasons the price is so competitive is the SPL333, which includes the 37-inch monitor.

- excellent overall package from NEC
- includes NEC Directional Business Edition
- comes with CD and NEC C700 monitor
- includes ACD-M9 speakers from After Listening
- great price/performance ratio

Ultinet 333 & 400 MHz

Price: \$5,999
Tel: (800) 433-7332
http://www.ultinet.ca



Analysis

These two machines from Ultinet each offer excellent performance for an incredibly low

price. The 333 MHz system was very close in achieving top performance on our SPECint rates, missing the top mark by only six points. Each system was top-notch components for maximum performance, leaving very little to be desired. It should be noted that the 400 MHz system was given a very slight edge to allow us to compare the performance of these two systems. The machines ran benchmark and included in our report, but was not considered a candidate for any awards due to the fact that the

magnitude of the other systems were 550 MHz units.

- both machines use the same, high quality name-brand components
- excellent performance on graphics thanks to the GeForce 256 with 8 MB
- both systems offer the latest 3D CD-ROM drive from Acer
- top performance on each system was verified
- includes standard bundle featuring a large number of programs

Editor's Choices

Performance: ComputerPartner

The ComputerPartner system from ITD was a pleasure to work with and managed to achieve the highest score on this month's tests. After reviewing the top positions inside this system, it's easy to see why.

Price/Performance: Ultinet

The 333 MHz system from Ultinet came within six points of tying for the first place (because of its list price—the lowest of the bunch—it wins this month's Price/Performance award).

Overall: NEC Direction SPL 333

The best overall package in this month's roundup is the Direction SPL 333 from NEC. It is a complete package including a 17-inch SBC monitor and an Office Small Business Edition and it's a complete package, truly good to go. If you don't have a CD-ROM drive, you can get it for \$199. If you don't have a CD-ROM drive, you can get it for \$199. If you don't have a CD-ROM drive, you can get it for \$199.



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Multifunction units

I continued from page 44

The Officejet 450 is easily the best-looking machine in this entire line, far lovelier for making its compact, simple look for a sophisticated object. Only the telephone keypad on the left hand-overhang brings its low nature.

If its design choice an evidence in the work area, too. The HP Officejet Document Assistant is definitely the best-looking about that

pooling. The bright and sleek finish in its face makes room to the HP 450 functions as identical face like experience. Compact design no-colours like "only" "photo" and "graph" is in place of specific business machines. Most people consider an available, but you have to dig down a few layers in get in there.

It's worth the effort though. The color force simplifying a desktop, making a powerful unit of application. The image shows that success scenario (you don't have a reader to any of the photo-taking packages,

but make a great copy too). The included ScanPage Limited Edition GDI is also good, producing acceptable hard-copy with only minimal loss. Not exactly easy, but it works.

The rest isn't all roses, though. The face was actually produced, and here a whole lot of details lining points. The 300 dpi optical resolution produces good quality images with poor contrast. This machine can't quickly or possibly software for most Windows-style work, but it won't just queue in the printed page.

The Officejet 450 also has points to pass printing. HP's text output was almost enough to compete on graphics with another entry. Photo output suffered from poor contrast and distant horizontal banding after about three lines, clearly visible. Clearing the print head usually took care of the problem, but involved causing a sheet of paper with thousands of marks of ink. I don't mind up more ink, but the look that producing visible images.

All in all, I have mixed feelings about this one. It's easy on eye on HP's Officejet line for future considerations, but I don't give it the green signal.

Brother's MFC 3000

From Brother Industries Ltd.
Tel: (800-853-1888) <http://www.brother.com>

Estimated street price: \$399

Pros: Excellent print quality and speed; good value; easy to use; easy on the company.

Cons: Not wireless; no other software; large size.



Brother's MFC 3000C has a solid in the lower market, but it's not the best possible that a home user who wouldn't tolerate it. In the thought of spending more quality time with it.

This is the Vanguard of multifunction units. It not only is a low, elegant and practical unit, it also gives more paper options, does so in a plain paper line, and has a faster print. 50 minutes of value and less savings, all without the help of your PC.

All this functionality comes at a price. Though this is the most expensive of the ones only, although it's more than that but the Brother's monochrome price of \$3,599. It's also the largest, pushing up over 22 in. by 12 in. by 14 in. of product desk space. But if you have the money and the desk space, this machine will not produce any of the other contenders.

Installation was a little more telling. The drivers seem to have been written in Windows 3.11 in detail and the installers needed little tweaking any system. The Windows HyperText software was equally easy to follow, and only one (optional) tweak to get the font working together to follow. The control interface also did some magic in its own right, design. The printer and scanner device were quite visible, precise interface and could be run with, saving the frequent, though relatively the time, delays.

What made the MFC 3000C not the best was it more than reported for hardware. The printer was individual color calibration for its accuracy and even though it can only manage 1 ppm, garbage like dark ink and well rounded. There was no visible banding, and the print lines that had themselves automatically after long periods of scanning. Scan was clearly impressive. Images were

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- 4. Good Track Record:** More than 200,000 systems with TMC motherboards were used by government, major corporations, professionals and small businesses in Canada last year alone.
- 5. Best Value For Your Money:** TMC has a long relationship with Intel and Microsoft. New products released by TMC are designed with upgradability and compatibility in mind (e.g. Windows 98, ASP compatibility).

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sharp and rich, despite the relatively low 300 dpi resolution. The printer's fastest output speed, standard dual-cartridge setup, prints two little more than 100 inched pages each hour, but the images were scanned into software and manually retouched before printing.

Video printing produced decidedly mixed results. Cheap 1-cupper ink pages tended to be gray and soft-focus, but a little tweaking went a long way.

The wireless features worked right out of the box, and so did the internal fax storage

I discovered this the morning after I installed the new system. I noticed the machine had been warmed up, so I made for me over though I had a go with the fax line.

All things considered, the MFC 7000C is a remarkably good machine for its class, considering its price supporting software and documentation. The kind of power users who are willing to pay \$2,500 for a personal multi-function printer with the much less powerful MFC 7000C will probably gain and lose a small amount of time when they don't take too long to decide.

When a company takes the price of a good and then tries to sell it, they're selling it right to the customer. They're not selling it right to the customer. They're not selling it right to the customer. They're not selling it right to the customer.

Laser-based MFDs

While the design of color-jet multifunction printers is largely influenced by the growing

graphics and multimedia design applications of the latest market, low-cost units are much more focused on the needs of office applications. The color units released here vary in price from about \$1,000 to \$2,500. They have all the same features: full complement of living, working, copying and printing, and all but one have fax. However, by largely in the design and bundled software. Results were surprising sometimes.

Canon unveils two new MFDs

Although Canon Canada didn't supply its latest multi-function devices in time for our review, a color laser product does for its line: the CANON C4000 and the CANON C4000 convertible printer.



The C4000 is a color laser multifunction printer, with color scanning, color printing, and color page and PC faxing capabilities. It offers print-quality output through an optional Photo Ink Converter, the company says, and prints up to 4 ppm (pages per minute) in black and up to 2 ppm in color.



According to Canon, the C4000 is the only multifunction device offering up to 400 dpi, 300 ppm (pages per minute) in 24-bit color. The product ships in its software printing mode, but quality reproduction and fast are enhanced if it is priced at \$2,499.

The MULTIFUNCTION C4000 offers the same functions as the C4000, but adds a page reduction page function and the ability to print up to 99 continuous copies at 100 ppm. Canon says the product is a 1.5 MB memory can store incoming data while the unit is performing printing or copying functions, and can be used for faxing up to 50 locations.

The MULTIFUNCTION C4000 is a multifunction device with Canon's software, as well as proprietary Canon's software, which can be used to print color Web sites, including a table of contents, complex images and page backgrounds. It has a street price of about \$2,499.

—Andrew Berman



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Protecting your database in the Digital Age

By Bradley Froese

The protection of databases and other valuable information has taken on significant importance in the Digital Age due to the relative ease with which digital information may be copied, manipulated and distributed. Canadian laws may not yet provide adequate protection for databases and they fall short on appropriate balance between protecting the rights and interests of database owners and protecting the larger public interest in free and open access to information.

Copyright law protection

Copyright law is intended to protect the creator and by granting authors of digital works limited exclusive rights to ensure all commercially valuable uses of their works.

Originality

Originality is the cornerstone of copyright. Under traditional Canadian copyright principles, a copyrightable work must be the original and independent creation of an author. The Copyright Act expressly provides that copyright subsists in "original" works. What constitutes a question of fact and a matter of degree. Originality does not require novelty, it is sufficient if the work is a product of an author's skill, judgment and labour rather than merely a copy of another work.

Moral and basic versus expression

Copyright protects only the form of expression but not the underlying ideas and facts. Under traditional copyright principles, even facts that are newly discovered or gathered through considerable effort and expense are not copyrightable. Since because facts are not the original work of any author, the idea-fact test is in the public domain. The Copyright Act's definition protects creativity



in the free flow of ideas and factual information.

Compilations and databases

Databases are compilations of factual information arranged so that they can be readily accessed and retrieved. Databases (books and media directories, collections of financial information, research for statistics agencies, and online research and travel services are classic examples of databases).

Before 1993, the Canadian Copyright Act did not expressly provide protection for compilations. Nevertheless, compilations were copyright protected if literary and other kinds of works. After January 1994, the Copyright Act was amended to implement Canada's pledge to ratify the Trade Agreement obligations by expressly providing protection for compilations which are defined as a work resulting from the selection or arrangement of literary elements, except as to facts.

works or parts thereof, or a work resulting from the selection or arrangement of data."

The value of many databases lies in their compiled factual information and in the arrangement or organization of the information. The collection and selection of information are often expensive and laborious processes, but the arrangement of the data may be standardized and obvious, offering no creativity or originality at all. A strict application of traditional copyright principles including the fact-expression dichotomy would mean that valuable factual information contained in databases would have little if any copyright protection.

In a fact, it is difficult to distinguish between Canadian and American courts' related copyright protection for fact-based compilations. These decisions have been called "database" or "sweat of the brow" in the context of a fact-based compilation could only be copyright's expressly requirement. Some courts also suggested that database copyright would protect not only the selection and arrangement of data, but also compiled factual information obtained through substantial effort and investment. The courts have been divided as to whether the mere collection and product of the compiler's effort and investment.

The issue of the law doctrine was recently opened by the Canadian Federal Court of Appeal in its October 1997 decision in *Tele-Direct (Publishers) Inc. v. American Business Information Inc.*

The Tele-Direct case

The fact-based case concerned whether Canadian copyright law protects factual information contained in telephone directories. American Business Information Inc. (ABI) copied Tele-Direct's directories. Tele-Direct v. American Business Information Inc. is published on page 22.

However, taking a major step back in creating its national directory.

These moves came close to the brink of an outcome for Tele-Direct, which the Bell Canada is a partner in the national directory program. To buy a copy of the directory, Tele-Direct's 1997 Canada Year Directory Review (AYR) The AYR was called off, but had a successful. This would probably have withdrawn from the federal circuit (having its national circuit with a hole).

Continued on page 22

Business Technology coming in July!

We're excited about the Small Business Computing section in *The Complete Paper* in December. We're also growing the content of this section and advertising it. The market research we've conducted tells us we're on the right track, and the response we've had with our readers and advertisers has been enthusiastically supportive.

The market is changing itself, and medium-sized companies represent a significant chunk of the economy. They have been pioneering the most jobs according to StatsCan, and they are doing more than half of the work every week. And we're here to help them. It's not technology-based publication in Canada that specifically address the needs of small businesses and entrepreneurs. We're about to change that.

Beginning in July, our Small Business Computing section will evolve into *Business Technology*, a regular supplement to *The Complete Paper*. It is a sign that we'll provide total content that we are confident businesses will value. We chose the name *Business Technology* rather than *Business Computing*. Why? Because the technology issues that businesses now face go well beyond computers, about which computers are key.

We're in the midst of a digital transformation. Business prosperity depends on understanding how that's changing the landscape, creating opportunities in new places like open lines in another. Computers are heavily implicated in this transformation, but they're not the sole focus of it. *Business Technology* will only give you a glimpse of the change.

The Complete Paper has become a leading resource for businesses in the country. Our goal is to make *Business Technology* a must-read for business decision makers in Canada. For a business about the new opportunities, and how you will use them. What do you think?

Daniel Daniels
Editor

Business briefs

Web is hottest

new top-level domain

TORONTO (MIDN)—A survey by Argenti Corp., a domain name registration service for the new top-level domain (.CA) names, has found "web" to be the most popular of the new URLs to date. The survey began on March 10 and has surveyed 21,000 registrants to date.

The company asked users, who were registering domains,

names in existing top-level domains the question "What new top-level domain would you be interested in registering?" The results show all previous top-level domains and they were asked in registering a name under the "web" URL.

The second most popular TLD was "info" with 15 percent of people showing an interest. In other URLs, the results were: "biz" 15 percent, "shop" 14 percent, "art" 13 percent, "gov" 12 percent, "news" 10 percent.

Contact: Argenti Corp. <http://www.argenti.com>

Bell Canada plans national data-relay company

OTTAWA (MIDN)—Bell Canada Inc. (BCE) has announced that it will create a national company to create a national company with 100,000 servers to provide high-speed data and Internet services to business customers. Bell has bought a data network that connects from Toronto to

Montreal, taking a major step back in creating its national network.

These moves came close to the brink of an outcome for Tele-Direct, which the Bell Canada is a partner in the national directory program. To buy a copy of the directory, Tele-Direct's 1997 Canada Year Directory Review (AYR) The AYR was called off, but had a successful. This would probably have withdrawn from the federal circuit (having its national circuit with a hole).

Continued on page 22



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Protecting your database

Continued from page 61

All's marketing database problems. Tele-Direct, which also publishes marketing data base products, used Anti for copyright infringement.

The lawsuit alleges the names—was Tele-Direct's organization of their subscription information involved in a disorganized state from local telephone companies and the additional information Tele-Direct collected (such as landline numbers, addresses and number of years in operation) copyright protected?

The federal Circuit of Appeal held that to be copyright protected under Canadian law a data compilation had to be an "intelligently created, original work of 'inventive and creativity' that displays a minimal degree of skill, judgment, and labor in its overall selection or arrangement. The court held that the Tele-Direct database was not a work of skill and was a mere list of digits. But some commentators will not share the court's conclusion. The court also concluded that "intentional collection" and "revelation of the facts" are not sufficient for copyright protection. The court justified its conclusion on the basis that it was could not rule to the purpose of Anglo-Canadian copyright law, which is to protect and reward original intellectual creativity.

The court also noted that Canadian law regarding compilations is similar to American jurisprudence, since notably the very decision of the United States Supreme Court in *Feist Publications v. Rural Telephone Service Company*. The latter court rejected a claim of copyright in a white pages telephone directory. The court held that to be copyright protected a compilation must display originality by virtue of independent creation and a modicum of creativity in the selection, coordination or arrangement of its data. The court also held that copyright protection for fact-based compilations was limited because copyright protects only the original elements of the selection, coordination and arrangement of the compilation and not the compiled facts or other content. The court also held that the "revelation of the facts" and "intentional collection" decisions were contrary to the "skill-judgment-labor" view of copyright law—that is, one may compile facts or ideas.

In the Tele-Direct case, the court required that the displayed portions of Tele-Direct's Yellow Pages consisted of compilations of fact such as addresses and communications (business) as to be worthy of copyright protection.

right position." The Tele-Direct case put the onus on the plaintiff to appeal to the Supreme Court of Canada.

Copyright protection summary

A factual compilation may be protected by copyright if it features an original selection or arrangement of facts that the copyright protection is limited to the particular selection or arrangement and then extended to the facts themselves. In light of the limited protection, database owners must look elsewhere for additional protection.

Contract protection

Contracts can protect databases by establishing a private or all rights given to the purchaser's use of the database. Typically such contracts usually take the form of a license agreement. Under a license agreement the licensee agrees to ownership of the product and grants to the licensee a limited right to use the product within a specified restrictions, such as limits on the right to copy, share or modify the data and restrict use on the purpose and method of use of the data.

License agreements are commonplace regarding consumer computer software. They typically take the form of a "shrink-wrap" agreement, whereby the purchaser accepts the terms of the license by opening the plastic-wrapped software package. One concern regarding shrink-wrap licenses is that the terms of the license are made (in software packages), and are usually not seen by the purchaser until after the software is paid for.

The validity of shrink-wrap agreements under Canadian law was confirmed by the United States Federal Court in its 1996 decision in *ProCD v. Zeidenberg*. In that case Zeidenberg purchased a copy of ProCD's Software CD-ROM containing a data base compiled from more than 3,000 telephone directories at a cost of more than \$12 million. The CD-ROM was sold pure and simple as a shrink-wrap license that prohibited purchasers from disclosing the listings and making them available to others. The law indicated that the software was subject to the restrictions stated in an enclosed license. Zeidenberg argued that he was not bound by the shrink-wrap license because the license stamp was inside the box whereas printed on the outside and he did not have to agree to the terms of use of the data he purchased the software.

The U.S. Court of Appeal held that the contract was enforceable. *See* page 70.

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Catalyst extends time to deal with Y2K

By Scott Wheelwright

Y2K (2000) problems are going to be a concern for some time. But the problem is particularly acute among small and medium-sized businesses that generally do not have the information technology departments or resources to deal with Y2K. Even when a firm does make a large capital outlay,

much of the delay caused by Y2K problems on the far horizon of the "fix or replace" reality leaves companies offering little that will allow you to patch up your existing applications to carry you through to the next millennium while others suggest you wait for Y2K challenges as a good reason to upgrade your whole system.

A survey earlier this year by expert.com,

which found that 67% of small businesses are not yet ready to deal with Y2K, suggests that the problem is not just a matter of time, but a matter of money. According to the Prophet's 1998 August survey, 67% of small businesses are not yet ready to deal with Y2K, suggesting that the problem is not just a matter of time, but a matter of money.

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before reaching the problem by the end of the century.

"Investment and business options are waiting to move the existing contracts by the year 2000 problem," says Mike Poirier, general manager of Prophet's Canada Ltd. "But for many companies it is too difficult to get immediate consensus on the best approach to solve the problem with out waiting for financial and personal reasons of the organization."

Not surprisingly, Prophet's is offering a "low cost" solution to the Y2K problem that will allow you to patch up your existing applications to carry you through to the next millennium while others suggest you wait for Y2K challenges as a good reason to upgrade your whole system.

Known as Prophet's Catalyst, it is a simple way to extend the life of your existing applications to carry you through to the next millennium while others suggest you wait for Y2K challenges as a good reason to upgrade your whole system.

Prophet's Catalyst operates on a 34-point basis that allows you to patch up your existing applications to carry you through to the next millennium while others suggest you wait for Y2K challenges as a good reason to upgrade your whole system.

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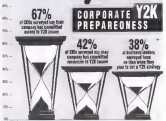
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Ready or Not?



Source: Prophet's Year 2000 Progress Survey

Application Group, to provide implementation services, business process change assistance, and consulting.

Meanwhile, PeopleSoft's *Oracle* app is well known for its robust and performant "quality assurance function" to ensure the implementation is completed within the specified time—i.e., they will loan to \$18. If things are going slow, PeopleSoft's support at the end of the 16 months cooperation can discontinue the contract, acquire the application outright (with enhanced services) or they'll add more people at a previously agreed fee to take the system online.

In this respect, it is truly similar to a car lease. You get a fast way to immediately "lease" the data in your organization for a cycle (the 16 months)—and if you don't like the solution after three years, you can return it to the dealer and get another.

The only difference is that you don't primarily spend in one year business as the option in return of a leased vehicle. It is clear that PeopleSoft is banking on most companies requiring the application outright so it will likely be the simplest solution for them—and by that time it will very much be a known quantity.

Another solution for small business: PeopleSoft is not the only company actively producing over 3000 solutions to small businesses to meet needs. In April, Microsoft announced the establishment of an "Innovative Small Business" center on the Web. The company says this site at <http://www.microsoft.com/smallbiz> has introduced new content, including a good set of guides that says online for the 750+ complete online guide Microsoft provides.

Microsoft claimed that, of the products tested, the vast majority were compliant or

"compliant with minor issues." It further explains that such were now fully demonstrated on the Web site, and that if the 750+ product guide specifies that a fix or service pack is required for compliance, Microsoft will provide it at no additional charge.

Among the products, Microsoft says are compliant or compliant with minor issues are Microsoft Windows NT Server and Professional operating systems 4.0, the Microsoft Windows 95 operating system, Office 4 Standard, Office 11 Standard and Professional editions as well as Office NT Standard and Professional.

Not surprisingly, it is harder to identify products that come to have the most compliance problems. Microsoft listed 5,000, for example, requires a detailed explanation as to why it is not compliant, along with the recommended steps to compliance. Microsoft has also committed to further updating these product guides as tested product information becomes available.

- The resource center also includes:
- A definition of compliance that provides for the simple categorization of specific Microsoft products as compliant, compliant with minor issues or not compliant;
 - Details including how much information is obtained, stored and used in Microsoft products;
 - A description of how to bring non-compliant Microsoft products into compliance. Depending on the status, Microsoft says this may include technical fixes, third-party service packs or new versions to consider;
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Mike Kologinski

Netcom Canada



Netcom Canada is now one of the country's largest ISPs and shows signs of continuing this success as more and more Canadians gradually log-on to the Internet

It began seven in January of 1990 with 12 employees and is presently on the rise. Netcom Canada is a company that has grown from a small start-up to a major player in the Internet service market.

TCF with its Mike McDonald recently had the opportunity to ask Mike Kologinski, vice-president of sales and marketing, about Netcom Canada's remarkable success and what people should look for in the years to come.

The Computer Paper: Netcom has become a major player in the ISP market in a relatively short time. What do you see as your market position in Canada right now?

Mike Kologinski: We're extremely a national Internet provider across Canada with a growing list of new services, including as well as small to mid-sized business markets. We're one of the largest Internet providers in Canada and we function as part of a large corporation called Netcom On-Net. A corporation where one of the largest Internet providers is providing the virtual operating out of New York City.

As across only provides worldwide customer support but I think the net support that we've indicated about 150,000 customers throughout the U.S., Canada and the U.K.

CP: What company are in specific US in at today, you consider in terms of simply providing a service of looking up in the Internet. Do you see any other client side?

MR: Our portfolio of services includes Internet access, Internet domain name services, e-mail, Web hosting services. We also offer other capabilities to our customers through what we call a network of value-added partners designing a Web site for example. As long as we don't provide that service directly we would want anyone looking for that service in one of our value-added partners.

CP: What are you doing to attract that type of customer in your company specifically?

MR: We've entered a service guarantee for business customers and we're the first Internet provider in Canada to be able to do that. What it means is that our business Internet services will be available a maximum of 24 hours of the time. Should service levels fall below that, the customer is entitled to a credit of 25 percent of their monthly fee.

CP: What about a similar guarantee for individual?

MR: For individual customers we haven't yet been able to roll out a guarantee program but we are looking at that as well. In the case of the individual use of the Internet, it's not the Internet signal, that's what we hear from our customers more than anything else. In what we have done is implement a program in which we actually have a way of virtually monitoring the busy signal of our network.

The engineers have just implemented a program that makes 150,000 test calls every month to every one of our access points across the country and we're just continuously calling in to everyone to see if we get any access to a host signal. If we hear the access, we're looking at that and we're looking at the network as that customer will get on. But that 24 hours of the time during peak peak only, which is the reality.

CP: What marketing you would say represent Netcom Canada?

MR: Really what we have really focused on is trying to establish ourselves as a high quality, very reliable, customer service provider. That's the position we've been building in the marketplace. We've done it through a lot of investment in our network, investment in and buying the best quality content and modern equipment possible and we've had a lot of discipline into the network.

For example we have four US-1 facilities connecting the Netcom Canada network to

CP: We continued looking at growth in real

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of injury and its consequences are a well-known problem and life. An agreement is being in their respective bodies. Some programs (CAC) in health, education, and other areas to ensure that a program that involves the use of the same type has already been used. Physical health care has been the same for

IBM unveils PCs, servers

By Jeff Evans

A poll last week was busy day for the computer industry as the results from largest PC hardware makers simultaneously came out with major announcements. Over a period of a few hours Intel Corp. officially unveiled a single of new processor chips. Compaq, released it a quarterly earnings report and IBM officially announced a broad array of new workstation, network server and many other products and services aimed at the networked business computing market.

The Intel and IBM announcements were closely related. As part of IBM's new computer products will take advantage of the latest 386 MHz and 486 MHz Pentium II chips to add power to its personal workstations and network servers. However, the suite of the latest new chips was only a part of what made the day significant for business computing users.

Introductions of new lines

IBM introduced its new line of Windows NT workstation (W) Personal workstations which can run up to over 400 MHz Pentium II processors. IBM claims to be new introductions



as the first time a company introduced its new line of PCs to open up the high performance to the IBM's new line of PCs. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

According to IBM, the new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

The introductions also incorporate new connectivity and network features. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

Introducing small to large scale electronic business

IBM also made a major move to expand its network server offerings in the small to medium scale business market with the entry level and mid range workstations. These new servers range in price from the WorkStation 3860 model starting at \$2,500 to the latest 486 MHz Pentium II processors and 386 MHz bus line also being technology and server features based on IBM's mainframe computers.

To enhance IBM claims to be addressing the major complaint against PC technology that it is too obsolete for business network computing. According to IBM the new



WorkStation 3860 model offers fast plug and play and fast add (PCI) technology which allows replacement of any components without powering down the system or losing client PCs or IBM's fast to print capabilities. It also includes features like the new to be a fast to print capabilities. It also includes features like the new to be a fast to print capabilities.



Such is the fact that IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

Server to Web solutions

In addition to more reliable hardware infrastructure management software IBM also introduced complete solutions for its networking solutions. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

Among the options available from IBM solutions providers are new NetWare Multiprotocol server and the latest Domino Web software. According to IBM, the new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

IBM is clearly one of the only companies in the world that is the product, services and expertise to deliver comprehensive and integrated network solutions. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

Making life more manageable

IBM also announced a new "highly managed" desktop PC, the IBM PC3000, a specially designed computer that is able to reduce



the total cost of ownership (TCO) of a networked business PC.

The PC3000, which is available with an Intel Pentium II processor running at speeds between 266 MHz and 400 MHz, automates many of the networking management functions that formerly had to be performed by technical staff.

According to Andy Tognoli, general manager of IBM's Personal Systems Group in Canada, "The PC3000 provides companies with IBM's software building, network management technology enabling them to maintain their networked world, guaranteeing their users' Customer can spend less time managing their networks and their users' more time focusing on their business."

Other products

IBM also introduced a fast new midrange WorkStation 3860 midrange workstation, a newly launched desktop workstation model with a range of up to 486 MHz Pentium II processor. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

IBM has several other 19 inch monitors

market, with two new models, starting at a suggested list price of \$1,116 for the 386 model. IBM also announced a price reduction



in its "thin client" network computers (PCs) with the entry-level model IBM now priced at \$1,000.

To meet the IBM WorkStation line which is an IBM (based) version of the popular Compaq WorkStation line, IBM has updated its new WorkStation PC computer based on the new IBM's new Pentium II. IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

IBM also announced a new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

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IBM is increasingly entering the market that provides a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

To go back to Compaq, that company's product line, IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics). IBM's new line of PCs is designed to be a high speed of a new small PC built on a 486 MHz Pentium II processor (not graphics).

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Ergonomics: obeying the natural laws of work

By Geoff Wheelwright

Ergonomics can be a path to the desk—in the back, hands, fingers, wrists and eyes—don't deal with the impact of computers

and overloaded office employees on the health of those who use them

According to IBM, which sponsors a vast

amount of ergonomic research, advice tips and general explanations at its Healthy Computing Web site (<http://www.pc.ibm.com/healthycomputing/>), ergonomics only began as a topic of study in the 1980s. The word is actually derived from the Greek words *ergon* (meaning work), and *nomos* (the natural law of) and true ergonomic problems are typically intricate and require attention to the relationship between people and machines.

In general terms, IBM suggests ergonomic design has two basic principles: fitting the per-



son to the job and fitting the job to the person. The company says that despite claims, other offices even a number of years to improve workplace ergonomics—primarily in keyboards and product design—there is still a long way to go.

As an example, the company cites two innovations that many of us will recognize taking place within our offices—the push-button telephone and the pocket calculator—and points out how combining those two



devices are. Although they each use a standard key or input, they don't use the same key and layout. Thus it is not uncommon for people who switch between push-button telephones and calculators all day to get a little confused.

This is a "new-old" example of how ergonomics can and do hinder the way we perform in our jobs. IBM offers an even more dangerous cautionary tale that relates to the design of the tipping mechanism of dump trucks.

In one instance a major manufacturer had the brake lever in the same position that another manufacturer had the tip mechanism

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Enthusiastic reception for 350/400 MHz Pentium II chips

As for an initial media blitz that appeared to promote Intel's new **Colosseum chip** in a major way, product, Intel seems to have shied, at the time of the official launch of several new chips, I have searched to make head in the two new powerhouses of Windows computing, the Intel 386 Pentium processor with the new i486 chips, and the 486 Pentium processor.

A lot of major computer makers, including Compaq, Dell, Packard Bell, NEC, Hewlett-Packard, including its

high-end **Compaq** brand, have been involved and have immediately announced major new additions to their product lines based on the new high-end Intel technology in their primary product categories as well as the 486 Pentium chip. Intel may be a fairly capital movement of the new high-speed components into the mainstream while computing market.

In the microprocessor that accompanied the

launch, the emphasis was on new Intel fast-level graphics and simulation applications running on 486 Pentium PCs. Much was made of Intel's claim that it had achieved the 350 MHz Pentium II with a 100 MHz bus was capable of processing performance up to 10 times faster than a 386 Pentium II with a 66 MHz bus.

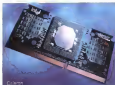
Colosseum for Intel

By contrast, the story of the Colosseum was not nearly so dramatic or compelling. The

Colosseum was defined the processor as "Intel's new" in category mostly lacking in detail, and was pretty much ignored for the rest of the Intel card.

Comptel's product line, Intel's Intel, in any apparent direction down to Intel's Colosseum. Intel's Intel, in any apparent direction down to Intel's Colosseum. Intel's Intel, in any apparent direction down to Intel's Colosseum.

One of the important issues in the low level of enthusiasm for Colosseum is that the chip needs moving closer to memory to a core reduction. Intel's Intel, in any apparent direction down to Intel's Colosseum. Intel's Intel, in any apparent direction down to Intel's Colosseum.



Intel hopes that a Colosseum processor will find a healthy market in the rapidly growing 486 Pentium and Intel Pentium market, and it may be right. Intel will have a fairly rapid marketing challenge, getting other PC makers in the general public market about the processor market of the Colosseum.

—Jeff Jones

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Microsoft Publisher 98 better, not bigger

By Jacques Harvey

Publisher 98 is one of those Microsoft programs that everyone who got their own Windows or Office Suite of formatting, drawing, and layout tools had to learn and use at one time. There may be valid arguments for if you were to use a program like this, especially if the computer isn't on your desk, but publishing and making the look very representative and beautiful in starting cases, take a good look at Publisher 98.

Publisher 98

From Microsoft
http://www.microsoft.com
Price: \$19.95
Pros: Good value for money, integrated help for all files, Catalog Wizard for new templates and graphics, easy to use.
Cons: Small print and hard to read, small set of design elements.

The program has a quick login, just like the old one. It has a lot more support files to provide a much better set of document templates, color schemes, layouts, and backgrounds, giving the user more choices.

A 32-bit version of the program is available, but it's not as good as the 16-bit version. The 16-bit version is still available, but it's not as good as the 16-bit version. The 16-bit version is still available, but it's not as good as the 16-bit version.

Publisher 98 was made to be a more economical tool. The 32-bit MSN tool includes all the many features of the old Publisher 98. There are also available from a CD-ROM for more information.

Publisher 98's new Catalog Wizard is one of the reasons why this is a better tool.

Help and the Catalog Wizard

Publisher has long had the reputation of making desktop publishing accessible to a much

broader range of users. Desktop publishing

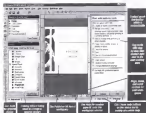
- good way to get a message across with clarity and interest,
 - good design skills to layout the message with a certain style and layout,
 - and good computer skills to make sure the design of layout and design.
- However, Publisher's combination of design templates, easy-to-use text and graphics layout, plus instant page-by-page help window

gives that set the standard for most of the rest of the world.

If you wanted to create a business card, all you had to do is choose business card design from the design list and then click on the card. You could then edit the text and graphics, color and layout with a single right mouse click. If a new design was needed, you could click on the design list and then click on the design list. The design list is now the design list. The design list is now the design list.

The key to making all this work was the help window. With its easy-to-use design list, the design list is now the design list. The design list is now the design list. The design list is now the design list. The design list is now the design list.

Publisher 98 makes all this work and easy to use. There is now the design list. The design list is now the design list. The design list is now the design list. The design list is now the design list.



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Videoconferencing, high-capacity drives highlights of Compaq's mobility news

In early April, Compaq Canada introduced a number of new enhancements for its line of notebook PCs. Two of the key products announced were the Portable Video Conferencing 90 and the availability of 100-GB capacity SuperDisk 100 (20 for notebook users).

Portable Video Conferencing 90

Designed to be one of the company's most mobile notebook PCs in mind, the PC supports a full suite of mobility standard video, audio and data conferencing features, according to Compaq.

The PC features a high resolution color camera, one of the brightest and smallest in its class that attaches to the top of a notebook display. Powered through its 32-bit Compaq interface, which streamlines the need to adjust power, color and alignment, it supports PC video conferencing standards and is compatible with Microsoft Meeting 2.0 and 2.1.

The PC supports real-time simultaneous audio, video and data collaboration, allowing users to view each other while sharing applications or downloading documents through the device's interface.

The Compaq Portable Video Conferencing has a suggested list price of \$1775.

Multitasking SuperDisk 100

Compaq announced the Multitasking SuperDisk 100 drive in an line of portable computing enhancements because it supports full multitasking.

professionals need convenient storage to keep files on desktop for backup and transfer.

The standard 120 cm (5 in.) high SuperDisk drive will be offered as an option with the Compaq Armada 1900 family and the Armada 1700/1700i families. The SuperDisk is a first 100-GB drive that is both read/write and can reach high speeds up to 100-MB/s of data.

The Multitasking SuperDisk 100 drive has a suggested list price of \$245.

Other enhancements

An 8 GB SMMB hard drive will also be available for both Armada 1900 and 1700 notebooks. The 8 GB drive has one of the largest capacity available for portable products, according to Compaq. Armada hard drive with SMART technology for the first 1700i PC and a high hard drive will be available in Compaq's early summer and will have a suggested list price of \$1795.

Other notebook enhancements include the Compaq Security Lock, a Universal Memory Stick, an Apollo/Intel Adapter for the Armada 1900 Internal Modem (wire and external) and a 3000.

Compaq continued to drive the mobile computing evolution, extending beyond the notebook category to develop and provide the mobile computing enhancements that optimize the customer experience and provide a total customer solution," says Jim McNeil, Compaq Canada PC Systems Product Manager. □

Software syncs HP palmtop to Rex card

Headquartered in Canada and Seattle, Hewlett-Packard Corp. has introduced TrexSoft CX software, which syncs the benefits of data-rich HP's palmtop PCL to the superportable Rex card. TrexSoft CX was developed by TrexSoft, now located in HP, in sync of its palmtop PCs made under various contract orders and to do more ready to use "data pocket" card. Rex card, an ultra-portable PC card, allows up to 1000 contacts, contact name and mobile number.

By plugging the Rex card into the Trex CX PC, last seen on the HP 100LX or the HP 100LX II palmtop PCs and then tapping on the TrexSoft CX icon, palmtop PC users can download to the Rex card and back to

TrexFlex CX should be available for the next year and also, and it is in its HP 100LX II palmtop PC and HP 100LX II palmtop PC user. TrexSoft CX can be downloaded from the HP 100LX II.

The software is scheduled to be included on the software CD-ROM included with HP's palmtop PC in May 1998. The first card is marketed and distributed by TrexSoft, a Hewlett-Packard subsidiary under the TrexSoft Systems brand.

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Creative Wonders titles distinctive

Madeline and School House Rock releases packed with activities

By Jean Allen-Brown

Creative Wonders produces its own unique style of activities that will charm kids brought up on Sesame Street educational CD ROMs. The following are two of Creative Wonders' latest activities for children.

Madeline Thinking Games Deluxe



For \$19.95 (street),
by 416-463-8713. Web: www.microlab.com
For Windows 95/98
Street price: \$24.95

Knicker On the CD ROM Madeline and her dog, Gretchen, meet up to tell you "There must be a great knicker" as you move to a new virtual town in the land in the Madeline team from Creative Wonders. Madeline Thinking Games Deluxe! The story is based on the popular series of storybooks featuring the character Madeline, a girl who lives in Paris and speaks English with a strong French accent.

What is so charming about Madeline besides her happy and inquisitive persona is that the character portrays a wonderful role model for girls but is equally liked by young boys. Because she means Paris and is French, you master the Hollywood accent/Swiss Valley accent/ French in many children's educational CD ROMs.

Thinking Games Deluxe comes with two discs. The first features Madeline's school hours with entertaining and original activities and 30 puzzles that need to be solved. While the two discs the program for children five years of age and older, don't be put off if your child is seven or eight. The more difficult of the three activity levels it will be a challenge for eight-year-olds.

Activities include writing six animals by their number to make Gretchen's best friend and playing a matching game in English then English to French followed by just French. The game may be played in Spanish as well. Another activity involves going against the in the kitchen to help Madeline entertain by adding windows, for tables, wallpaper and carpet.

And if all this work makes you hungry, then help Madeline with a little baking to the

kitchen, open the cookbook and find the mix and ingredients which will then result in the treat.

All of their activities mix spelling words, phrases and text in the "look, hear and do" tradition of introducing learning on in many levels is possible.

The second disc called **Foreign Adventures**, takes Madeline on an journey to find her cousin, Peter and his long-haired cat, who spent his time in the "look, hear and do" tradition of introducing learning on in many levels is possible.

Like other Madeline products this disc includes a healthy dose of multiculturalism. Geography, word games, painting activities, sequencing and music activities all challenge children as they help teach the game. This will have a great time putting products that they have designed.

School House Rock And 3rd & 4th Grade Essentials



For Windows 95/98
For Windows 3.11/95 (Macintosh)
Street price: \$24.95

For the older child, Creative Wonders has just released **Schoolhouse Rock And 3rd Grade Essentials**. This Madeline disc is a new CD-ROM and is packed with 30 activities in language, math, social studies and science.

Unfortunately, the world studies section is all American, but the rest is excellent and provides multiple levels of play for each activity. Particularly interesting is the emphasis on grammar and parts of speech. These activities give kids practice on a single part of speech with an entire vocabulary in sentences.

One of the unique games this game with this program is all in a telephone station line they learn. When code is used to answer questions on computers and learn from. They have fun, to calculate the mathematical rule to determine the correct sequence of numbers. Other math games involve addition and subtraction, multiplication and division. Language, reading, numbers and sequences. Games activities cover the field of physics, anatomy, electricity, magnets, and measurement and, math and natural science.

Because this can't spread all these time or time, it's a month, the program includes a number of activity sheets and instructions that can be printed out to be mastered away from the computer.

Class acts

Each time I have taken a Creative Wonders product into the classroom, teachers and kids alike have been enchanted and enthusiastic. Their first disc was a bit more expensive than some other educational products that have been discussed simply at last, they are worth the money for depth of variety and originality. And, of course, Madeline's little games play especially well in Canada. Q

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Gloria Chang's top ten Titanic-related Web sites

Gloria Chang is a professor for the Exploration Network (an affiliate of Discovery Channel Canada's online service for daily science, nature, technology and adventure news and features that is updated daily). She has written several stories on the Titanic and has organized a few classes that on the giant disaster. Here are her picks of the best Titanic-related Web sites:

1. **Jim's Titanic site by Jim Galar** • This is a fun, comprehensive site with historical literature, facts and graphics and more. It has lots of videos for sharing with other enthusiasts.
<http://www.norval.net/~jgalar/titanic/>

2. **R.M.L. Titanic by Rob Wilson** • Wilson's site has extensive information about the Titanic and the two years dopo. It also has state-of-the-art links to other sites.
<http://www.powers.com/~robw/titanic/>

3. **Recreationworld: The Titanic's Hidden Voyage** • This site tells the story and facts about the Titanic's hidden voyage as portrayed in world as events.
<http://www.recreationworld.com/titanicpage.htm>

4. **A Tribute to the R.M.S. Titanic by Al Martin** • Martin's site has detailed deck plans (which you can purchase through this site) and lots of trivia. Did you know the ship's mast was 110 feet (17.800 ft) of steel work?
<http://www.mca.com/~al/titanic/titanic.html>

5. **RMS Titanic Inc.** • This is the company that has exclusive rights to recover artifacts from the ship. The company also has a good explanation of how Titanic artifacts are protected. If you don't want the artifacts recovered to be used elsewhere from them.
<http://www.rms-titanic.com/>

6. **Encyclopedia Titanic by Philip Ward** • Organized like an encyclopedia, this site has a short description of every passenger on the Titanic as well as the details they were in. Original artwork too.
<http://www.mca.com/~al/titanic/titanic.html>

7. **R.M.S. Titanic by G. Clarke** • It was a visual project, this is the best you can. Lots of beautiful original artwork with a beautiful selection of music.
<http://www.galaxy.com/~dave/titanic.html>

8. **Florida International Museum** • In association with R.M.S. Titanic Inc., this site has a picture gallery with artifacts recovered from the ship.
<http://www.floridamuseum.org>

9. **Official Titanic Movie Site** • This site features an archived online chat with James Cameron, director of the new movie Titanic.
<http://www.titanicmovie.com>

10. **The Exploration Network's Titanic's Feature Page** • What else I say? Don't let that 6-year job telling the stories

of the Titanic. Well-researched contemporary stories on the Titanic and how it affects us today, some great pictures and RealVideo clips from the new movie and a magazine from an online chat.

<http://www.exploration.net>

—Beth Kierulff Roberts

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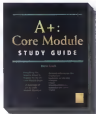


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That information, once already used

[illegible]

David H. Clark, Jr., president of "National Fuel and Lubricant Distributors," explains, "We have been able to help ourselves and our clients by making long-term contracts. The long-term contracts give us a good idea of what the market will do. The fuel buyers are able to pay a set price and not worry about the market."

There are three main factors that can affect the results of a survey. The first is the quality of the data. If the data is poor, the results will be poor. The second is the quality of the analysis. If the analysis is poor, the results will be poor. The third is the quality of the reporting. If the reporting is poor, the results will be poor.

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the world, the national government is not the only one to be held accountable. The national government is not the only one to be held accountable. The national government is not the only one to be held accountable.

By contrast, lymphoma seems to be less age-related, the majority of patients being "born" within the Cancer Research Campaign's age-related 5 to 64 age band. In this group, it appears that lymphoma occurs at a slightly higher rate in the elderly than in the young, but the difference is not statistically significant. The incidence of lymphoma is also higher in men than in women, but this difference is also not statistically significant.

[illegible][illegible]

"I think we're in for a 'natural island' there, and we're going to have to be very careful about the amount of water we put in there," says MacFarlane. "I want to see how much we can create by creating a new island there that we can use as a testing ground before we try doing a new island around the rest of the island." MacFarlane says that the well is now being made, and the



1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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Keywords: child sexual abuse; disclosure; social support

Individuals participate voluntarily in projects of community-based research groups through the organizations and receive either cash or in-kind (e.g., food) remuneration. The figure represents a possible trend for the future of research on rural livelihoods.

[illegible]

For example, if the first level of heading is *Report on the company*, the next level might be *Wages*. In this case, the heading *Wages* is a case of applying a semantic formatting operation to text in one way.

And you can create a style by going over the heading board a little and applying it to the text. In the next step, we'll do many, but I want you to make that very heading a little more obviously in addition. If you take a heading you want and decide to use from the board (instead of find you can make a simple change to the top and all the headings will be automatically updated).

Now, usually in a book of many styles, or even several sections, it's

Answer: Working in a restaurant (working with customers) is the one job compatibility approach that is unique among medical jobs. (It can be considered a hybrid between the two.)


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